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Description of Teacher Inservice Education
Materials.

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ABSTRACT

The described inservice teacher education course is for elementary school teachers who wish to increase their skill in individual tutoring of children who need remedial help with basic mathematics. Included in this informational report are an outline of the contents of the course, description of activities and resources involved in the course, and ordering information for materials. A critique of the course is provided. (JD)

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DESCRIPTION OF TEACHER IN-SERVICE EDUCATION MATERIALS

A. SUMMARY INFORMATION

Title: INDIVIDUALIZING INSTRUCTION IN MATHEMATICS

Publication Date(s): 1971

Intended Users: Inservice and preservice teachers interested in individualizing mathematics instruction

Grade Level(s): 1 - 6

Number: Group

Primary Focus: To increase the skill of elementary school teachers in individual tutoring of pupils deficient in understanding of mathematical concepts and procedures is the focus of this product.

School subject(s) and/or in-service topic(s) covered: The topic is individualizing math instruction. This package is skill-oriented and provides math teachers with methods for individualizing math classes and tutoring students on a one-to-one basis.

What participant does in using the materials:

Participants read handbook, view films and perform actual tutoring practice sessions. Thirteen one-hour sessions are recommended, with an equal amount of time spent after school preparing for the microteaching lessons. The course is usually scheduled on a three times per week basis. There are six follow-up lessons at the rate of one per month, to be started one month or so after completing lessons.

Resources: The items needed to complete the program include:

- Nine reels of film
- Teacher's Handbook
- Coordinator's Handbook
- Technical Report
- Projector and screen, required, not provided
- Videotape or audiotape for self evaluation, required, not provided

Describer critique:

This package is very comprehensive and is described in great detail in the films and handbooks. It is quite structured and must be followed in sequence -- preferably in its entirety.

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B. In~depth Information

1.0 PURPOSES:

The developers state that this multi-media teacher inservice program was developed in order to minimize the confusion students often experience in math and to allow for the variety in ability and advancement among students in any single class, individualization must be practiced. This is the rationale of the developer, who notes that, "...observation of mathematics classes typically reveals that teachers spend at least a small part of their time doing one-to-one remedial tutoring. The need for such tutoring exists because many pupils cannot sufficiently understand mathematical concepts through textbook explanations or large-group instruction."

Minicourse 5 was developed to provide math teachers with skill-training so that they might more effectively tutor their students. This minicourse is skill-oriented rather than content-oriented, and answers many questions teachers might have on individualization of math instruction.

2.0 CONTENT — Scope and Sequencing of Topics:

The instructional sequence of this course is as follows:

- Lesson 1 - Objective: To improve teacher skills in rewarding pupil's correct responses and encouraging their active participation in the tutoring process.
Skills: Asking prompting questions; using verbal praise to reward correct response.
- Lesson 2 - Objective: Increase teacher skill in diagnosing pupil's deficiencies in understanding math concepts and computational procedures.
- Lesson 3 - Objective: To increase teacher use of techniques that help to develop pupil's understanding of mathematical concepts and computational procedures.
- Lesson 4 - Objective: To increase teacher skill in evaluating student progress and assigning practice examples.
- Lesson 5 - Objective: To improve teacher skill in organizing the math class period for individual tutoring.

In reference to the sequencing of the components, the developer notes:

The minicourse is designed to provide a complete inservice training package. Research evidence indicates that the minicourse is effective when the entire package is used, following the recommended procedures. There is no evidence that components of the package are effective when used separately.

In each lesson teachers are provided with an Instructional Film, a Model Film, and a chapter in the Teachers' Handbook which includes information on tutoring and teacher self-evaluation forms for microteaching.

A number of important administrative procedures must be completed before the minicourse actually begins. The developer suggests a one month period with the caveat that an attempt to shorten this period could result in significant problems in the course itself. The tasks involved in the preparation are clearly described in the Coordinator's Handbook.

3.0 ACTIVITIES AND RESOURCES INVOLVED IN USE OF PRODUCT

3.1 Description of main in-service activities:

This minicourse is a 13-day program consisting of five lessons, with a six month follow-up program, and a short orientation preceding the course. Each lesson, with the exception of Lesson Five, has a practice microteach session with two students, and all lessons except Lessons One and Five require three days. (Lessons One and Five require two days.)

Day 1 is usually devoted to reading one or two chapters in the Handbook, and viewing the Instructional and Model films for that lesson. Day 2 involves practice microteaching and self-evaluation. Day 3 consists of reteaching (optional), reviewing of model films, tutoring and self-evaluation. The course takes an hour a day for twelve school days, in addition to an equal amount of time for preparation. A coordinator is needed to run the program. Micro-teaching must be done during school hours.

3.2 Help given in use of product:

The Teacher and Coordinator Handbooks spell out every step of this program in minute detail, leaving nothing to guesswork. Directions, diagrams, answers, bibliographies, references and general information are given wherever necessary.

4.0 EVALUATION OF TEACHER INSERVICE LEARNING

Formal evaluation is built into each microteaching and reteach lesson. Also, a post-minicourse session is held within a week after the course, so that teachers may discuss any problems that surfaced in the program.

5.0 ORDERING INFORMATION

5.1 Resources required/recommended:

- Needed are:
- 16 mm. sound projector, screen and space for viewing
 - Videotape system and audiotape system for each group of 4-8 people, for evaluation
 - A room (12' x 14') equipped for tutoring, in which to do the micro-teaching
 - Release time for teachers during school day (7 one-hour sessions); students

Time required is one hour a day for twelve school days; equivalent amount of time for preparation

5.2 Distributor name/address:

Macmillan Educational Services, Inc.
866 Third Avenue
New York, New York 10022

(212) 935-2000

5.3 Components/approximate costs:

Component	Purchase	Rental	No. Req.	Reusable
INDIVIDUALIZING INSTRUCTION IN MATHEMATICS: MINICOURSE	\$1,545.00	\$220.00 for six weeks	1/Group	Yes

included are:

nine reels of film:

- 1 - Introduction
- 2 - Instructional Lesson 1
- 3 - Model, Lesson 1
- 4 - Instructional, Lesson 2
- 5 - Model, Lesson 2
- 6 - Instructional, Lesson 3
- 7 - Model, Lesson 3
- 8 - Instructional, Lesson 4
- 9 - Model, Lesson 4

*Teacher's Handbook, including self-evaluation forms and follow-up lessons \$3.60 per additional copy

*Coordinator's Handbook \$4.95 per additional copy

Technical report - a report on the research evidence of Minicourse effectiveness

* To be ordered from MacMillan Educational Services, Inc. (See 5.2)

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6.0 HISTORY OF DEVELOPMENT

6.1 Identification of the developer:

Meredith D. Gale, Barbara Dunning and John Galassi developed this minicourse for Far West Laboratory for Educational Research and Development. (Acknowledgements are given to Research for Better Schools, Inc., and the American Institute for Research, for their cooperation in certain aspects of the research and development of this product).

6.2 How developed and when:

The minicourse was developed over a period of two years -- during which time several handbooks and scripts for the production of eight films were produced. The minicourse was field-tested three times and revised extensively after each test. Several hundred teachers took the course and offered criticism and suggestions for improvement. A preliminary revision of the course was developed in the fall of 1968. This version was published in 1971.

6.3 Evidence of effectiveness with users:

Records of actual classroom teaching behavior before and after the minicourse show that the average teacher made major improvements in his/her math teaching skills after exposure to this product. Research evidence shows that the minicourse is effective in conventional classroom settings as well as in an individualized math curriculum. (A technical report on research evidence of minicourse effectiveness is included in the package).

Additional research evidence regarding this and other minicourses has been published in: The Minicourse: A Microteaching Approach to Teacher Education.

C. DESCRIBER CRITIQUE

Appropriateness / adaptability / technical quality:

If followed in the sequence suggested by the developers, this product will definitely measure up to its stated objectives. The film/discussion portion of the program is best suited for a group of inservice teachers led by a coordinator; the microteach and reteach sessions are most effectively done individually.

Content accuracy/social fairness/community acceptance issues:

The history of the development, which includes much field testing and user feedback, indicates content accuracy of this product. The participants in the films show racial and ethnic heterogeneity and there appears to be no evidence of sex bias.

The nature of the subject -- math instruction -- makes it unlikely that users will find the content controversial.

Overall summary/comment:

This minicourse package seems to have been developed with much attention to accuracy and effectiveness. The procedures are described in great detail -- an attribute which may discourage deviation or adaptation. The product does need to be followed sequentially and must be carefully organized. The films provide a great deal of information and they successfully illustrate the steps through which the participant achieves success with his/her students: i.e., diagnosis, demonstration, evaluation, and practice. The process outlined in this teacher training design is intended to help teachers individualize math instruction.